Breakout Session #2: How to Use Optical Properties to Monitor Suspended-Sediment Concentrations

Session Lead: Dave Schoellhamer, USGS (dschoell@usgs.gov)
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Scribe: Mark Landers, USGS

Sessions Focus: Methods and case studies for monitoring optical properties and using them to determine suspended-sediment concentration.

Session Goals/Outcomes: Develop a set of recommendations for how to design and implement a turbidity/sediment monitoring station and network using optical sensors.

Some Guiding Questions for the Breakout Session #2:

1. For what kind of studies are optical sensors desirable and undesirable?
2. What are the important aspects to consider in designing a monitoring network?
3. What properties should be measured (concentration, size, load)?
4. What are the important aspects to consider for installing a monitoring site?http://water.usgs.gov/osw/techniques/TSS/rasmusse.pdf
5. What factors should be considered in locating the instrument in the stream channel?
6. How can instrument fouling be minimized?
7. What are the important aspects to consider for maintaining a monitoring site?
8. What maintenance should be performed and at what frequency?
9. How is the quality of the data assured?
10. What water sampling is needed at a monitoring site?
11. How should the output of an instrument be calibrated?
12. What is a reasonable frequency of field calibration, and what factors determine this?
13. What factors must be considered when calibrating an instrument in the field instead of in the laboratory?
14. What are the important aspects to consider for calibrating an instrument?
15. How should fouling be handled during data processing?
16. How should spikes be handled during data processing?
17. What are the important aspects to consider for processing instrument data?
18. What other important considerations are there for designing and implementing a monitoring network?
19. What is the realistic use and limitations of this technology?
20. How should in situ results be compared and calibrated to channel section results?

Silver Baron "D", Wednesday, May 1, 8:00 a.m. to 12:00 p.m.

8:00	Welcome, goals, format, products:	Schoellhamer
8:10	Guidelines for the operation of continuous water-quality monitors: Quality assurance and quality control	Wagner
8:30	Four case studies: Overview (location, problem, goal, general approach) and sampling design	Pat Rasmussen Rand Eads

	(spatial coverage, frequency, duration, parameters) (15-minutes per presentation back-to-back, Landers leads)	Paul Ankcorn Judith Burke
9:30	Sampling design: Panel discussion, recommendations:	Schoellhamer
10:20	Break	
10:40	Installation, fouling, and maintenance for four case studies, each presentation 10 minutes (Landers leads):	Pat Rasmussen Rand Eads Paul Ankcorn Judith Burke
11:20	Installation, fouling, and maintenance: Panel, recommendations	Schoellhamer
12:00 p.m.	Adjourn, Lunch, Field Trip	
5:30 p.m.	Subgroups convene on own for dinner and discussion	

Grand Expo "A", Thursday, May 2, 8:00 a.m. to 12:00 p.m.

8:00	Review yesterday's progress, chart today's	Schoellhamer
8:10	Calibration: Four case studies: each presentation 10 minutes (Landers leads):	Pat Rasmussen Rand Eads Paul Ankcorn Judith Burke
9:00	Calibration: panel, recommendations:	Schoellhamer
9:40	Break	
10:00	Data Processing: Four case studies: presentation 10 minutes (Landers leads):	Pat Rasmussen Rand Eads Paul Ankcorn Judith Burke
10:40	Data processing: panel and recommendations:	Schoellhamer
11:30	Review, what did we miss?:	Everyone
12:00	Lunch	
1:00-5:00	All attendees reconvene in Grand Exposition C; Reports from 4 Breakout Groups and Wrap up	